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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,463	02/27/2004	Yuko Nakamata	FUJI:294	5175

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EXAMINER	
GARRETT, DAWN L	
ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/789,463	NAKAMATA, YUKO	
	Examiner	Art Unit	
	Dawn Garrett	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19,21,22,24 and 25* is/are rejected.

7)☒ Claim(s) *20 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9-3-04; 2-27-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 20 and 23 are objected to because of the following informalities: In claims 20 and 23, "layres" should be changed to "layers". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 and 17 recite 3B group elements. It is assumed for the purpose of examination these elements are elements of the Periodic Table; however, an edition of the Periodic Table of the Elements is not clearly identified by either the claims or the disclosure. Accordingly, it is unclear which elements applicant intends to claim. Clarification is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-19, 21, 22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri et al. (US 6,551,725). Raychaudhuri et al. discloses organic light-emitting diode devices comprising inorganic buffer structures. The OLED comprises a substrate, anode,

emissive layer, a buffer structure comprising at least two layers and a sputtered metal or metal alloy as the cathode (see abstract). The device comprises a first buffer layer of alkaline halide and a second buffer layer of metal or metal alloy (see abstract). Although Raychaudhuri et al. does not exemplify multiple layers of the first buffer layer and the second buffer layer, Raychaudhuri et al. does teach the devices comprise "at least two layers". It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed multiple layers of each of the first buffer layer and second buffer layer, because Raychaudhuri et al. teaches more than one of each may be present and it is obvious to combine materials useful for the same purpose. Raychaudhuri et al. teaches the bilayer is preferably greater than 0 and less than 30 nm (see col. 6, lines 51-54). Accordingly, multiple layers of buffer layer 1 and buffer layer 2 would meet the thickness requirements of claims 2, 12, 21, 22, 24 and 25. Furthermore, buffer layer 1 may be no greater than 10 nm (see col. 6, lines 29-30) and buffer layer 2 may be less than 20 nm but greater than 0 nm (see col. 6, lines 49-51). These limitations fall within the thickness ratios of claims 3, 4, 13, and 14. Preferred material for buffer layer 1 includes LiF (see col. 6, lines 24-25) per claims 6 and 16. The metals of buffer layer 2 have work functions between 2.0 eV and 4.0 eV per claims 5 and 15 (see col. 6, lines 35-36). Raychaudhuri et al. teaches metals for buffer layer 2 (see col. 6, lines 32-35) that have electronegativity values within the range recited in claims 8 and 18 (for example, on the Pauling scale, gallium has an electronegativity value of 1.81 and sodium has a value of 0.93). With regard to the method claims, sputtering is taught as the means by which the cathode is formed (see Examples and col. 3, lines 45-47).

Allowable Subject Matter

6. Claims 20 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art, Raychaudhuri et al. (US 6551725) fails to teach or to render obvious forming the buffer structure in a discontinuous shape as required by claims 20 and 23.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571)272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dawn Garrett
Primary Examiner
Art Unit 1774

D.G.
March 30, 2005